

Handwritten: K. Williams
THE

Mariners Compass

COMPLETED:

PART THE SECOND.

OR,

The Expert Seaman's best Guide.

CONTAINING

Ample Specimens of the *General* TABLE of the Magnetical Variations (or Deviations) of the Magnetick Needle at Places, Ports and Harbours, whose true *Latitude* and *Longitude* from the Meridian of *London*, are certainly known.

By Z. WILLIAMS.

L O N D O N:

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Mariners Compass

COMPILED

THE GREAT AND SECOND

The Expert Seaman's Best Guide

AND THE CONTAINING

A full and complete

of the most

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T O

HIS GRACE JOHN DUKE OF
BEDFORD,
First Lord Commissioner of the
ADMIRALTY:

And to each and every of the Hon-
ourable Lords Commissioners for
Executing the Office of Lord HIGH
ADMIRAL of GREAT BRITAIN:

The Purport of the ensuing Treatise is,
in all Humility, submitted to their su-
perior Judgment, wise Consideration,
and Protection, By

Their LORDSHIPS

Most Obedient, and

Very Humble Servant,

The AUTHOR.

THE

TO

HIS GRACE JOHN DUKE OF
BEDFORD,
First Lord Commissioner of the
ADMIRALTY;

And to each and every of the Hon-
ourable Lords Commissioners for
executing the Office of Justice
ADMIRAL OF GREAT BRITAIN.

The Report of the sailing Trench is
in all its simplicity, submitted to their
prior judgment, with Consideration,
and Protection, By

THOMAS LORDS

His Majesty's

Secretary of State,

The Author.



THE
P R E F A C E.

THE true Reason or Cause of the Changes of the Magnetical Variations of the Mariners Compass, has long exercised, without Success, the most Inquisitive into
B the

the Laws of the Magnet. Whether I have been so fortunate as to open a Door for discovering what has been so long concealed, is here humbly submitted to the wise Penetration of the Judicious, together with some Specimens of what shall be published, if this Attempt meets with Approbation.

For the so much wanted and long wished for *General Table of the Magnetical Variations*, deduced from the Principles of unerring Magnetick Laws, hitherto little known even to the Learned themselves; is now (after much Study, many expensive Experiments,

ments, and curious Researches) most happily compleated; and may be of great use in assisting to the better settling of Geography, Hydrography, &c. as also to assist Mariners in navigating Ships at Sea. Seeing that Geography is as yet very uncertain, as it plainly appears by the sundry and different Accounts set down by Geographers, and in Sea-Charts and Journals, and their vastly different Estimates of Longitudes, even in the near Parts of the World; and in remoter Parts much more, differing upwards of fifty Degrees in their Accounts; as may be seen

at the End of WELLS's *Geography*, and fundry others, both Antient and Modern. This same Table (as part of the Author's Labours on the Subject) is submitted to the different Sentiments of the Virtuoso's of the Age; being well assured, that (by its Usefulness) it will maintain its Reputation, in despite of any malevolent Detracter, or invidious *Momus*; such base Disparagers being neither capable to amend, or devise a better on this Subject.

N.B. If in the Judgment of any Observator, these Tables should in some Places seem somewhat wide;

wide; be it known (as it is generally granted) that Geography and Hydrography are as yet very imperfect; and those Magnetical Observations of the Variations, as hitherto transmitted, are very uncertain; and a true Account of the different Manner of making their Observations of the Magnetical Variations, are likewise very uncertain; as whether they were made with the naked Magnetick Needles, or with Needles covered with their Cards variously set, --- as some with the Flower de Luce towards the North Westerly, and some others towards the North Easterly of the

true North; each according to the then Magnetical Variation, at that Time and Place, where those several Mariner's Compasses were made, &c. --- As also the Observations made of the Magnetical Variations may oftentimes be erroneous through various unforeseen Accidents, notwithstanding the utmost Precautions, Care and Diligence of the Observer, which may Cause that the Observations then made, may not exactly agree with the Calculations made for that same Place in the Tables; these Tables being deduc'd from the unerring

erring Laws of Magnetick Principles.

But if, on very good Observations made, there should be observed any considerable difference or defects, and if that on very good Credit the same be communicated to the Proprietor, it shall then be (by the said Laws) wholly rectified in the next. But neither the said Principles, nor the Method how to perform the Tables, will ever be divulg'd nor made known to any, unless a sufficiently good and satisfactory Encouragement be first made sure to the Proprietor, and his

Assigns; as also that some suitable Consideration be by him received for the Expence of Time and Money, already spent in the Pursuit. And if so countenanc'd and encourag'd by Authority to proceed, will prepare a sufficient Number, or Setts of the like Tables, serving for all Times and Places, during one whole Revolution of the Magnetick Points, which will serve as a perpetual Table of the Magnetical Variations.

If what is here propos'd for obtaining the Magnetical Variations, and consequently the Longitudes of Places, should thereby

thereby conduce to the better settling of Geography and Hydrography, which has hitherto been much wanted to perfect that most noble and profitable Art of Navigation; I say, if this should answer the design'd End; yet would I have the Method that is hitherto commonly practised, be diligently observed, and not in the least neglected. But if not to the wished for degree of exactness, yet it will be found to be of great Use and Improvement to that most profitable Art of Navigation, and a Divertisement to the inquisitively Curious, who
haply

(x)

haply may (severally in their Turns) add their Mites, and thereby Magnetical Knowledge may be improved.

Z. WILLIAMS.

A

A
T A B L E
O F

The present *Magnetical Variations* at
noted Towns, Ports, and Places,
according to the reputed *Latitudes*
and *Longitudes* of the said Places,
being Abstracted out of the General
Universal Table of the *Magnetical*
Variations prepared and calculated
for the Year 1746,

By Z. WILLIAMS.

With some Specimens of the said
General TABLE.

Which *Table* is now ready for the Press;
and if the Judicious do deem the same to
be of use in the Art of Navigation, on
proper Encouragement granted by Au-
thority to the Author, the whole Gene-
ral Universal Table will then be imme-
diately published.

L O N D O N:

Printed for the AUTHOR. M D C C X L V.

T A B L E

OF

The present Magnetic Variation at
 noted Towns, Ports, and Places,
 according to the reported Azimuths
 and Longitudes of the said Places,
 being Abstracted out of the General
 Universal Table of the Azimuths
 prepared and calculated
 for the Year 1750.

By R. WILLIAMS.

With some Specimens of the said
 General Table.

Which Table is now ready for the Press;
 and if the Judges do deem it fit to
 be set off in the Art of Navigation, on
 proper Encouragement granted by Au-
 thority to the Author, the whole (ex-
 cept the Universal Table will then be im-
 mediately published.

L O N D O N

Printed for the Author, MDCCLX.



A
T A B L E
O F

*The Latitudes, Longitudes, and
present Magnetical Variations
at noted Ports and Places.*

The Names of Places.	Latitude North.	Longitude West.	Magn. Variat. West.
	D. M.	D. M.	D.
<i>Coasts of England.</i>			
<i>Berwick</i>	55. 30	1. 39 W.	19 W.
<i>Scarborough</i>	54. 20	0. 3	18 W.
<i>Tarmouth</i>	52. 45	1. 40 E.	16 W.
<i>London</i>	51. 32	0. 0	17 W.
<i>Dover</i>	51. 15	1. 18 E.	16 W.

The Names of Places.	Latitude North.		Longitude West.		Magn. Variat. West.
	D.	M.	D.	M.	D.
<i>Dartmouth</i>	50.	27	3.	36	17 W.
<i>Lizard</i>	49.	55	5.	14	18 W.
<i>Milford</i>	51.	45	5.	15	18: W.
<i>St David's Head</i>	51.	56	5.	22	19 W.
<i>Holy Head</i>	53.	23	4.	40	19: W.
<i>Coasts of Scotland.</i>					
<i>Glasgow</i>	55.	53	4.	5	20 W.
<i>North Part of Sky</i>	57.	50	5.	21	20 W.
<i>Island</i>					
<i>Farra Head</i>	58.	23	5.	5	22 W.
<i>Edinburgh</i>	55.	57	2.	46	19 W.
<i>Coasts of Ireland.</i>					
<i>Fair Fore-land</i>	55.	5	6.	30	21 W.
<i>Londonderry</i>	54.	55	8.		22 W.
<i>Belfast</i>	54.	36	6.	50	21 W.
<i>Staggs of Broad-</i>	54.	7	19.	5	23 W.
<i>Haven</i>					
<i>Limerick</i>	52.	28	9.	48	21 W.
<i>Mizon Head</i>	51.	15	11.	30	21 W.
<i>Cape Clear</i>	51.	10	10.	30	19 W.
<i>Cork</i>	51.	49	9.	50	20 W.
<i>Dublin</i>	53.	20	7.	6	21 W.

The Names of Places.	Latitude North.	Longitude West.	Magn. Variat. West.
	D.M.	D.M.	D.
<i>Coasts of New-England and Newfoundland.</i>			
<i>Charles Town on } Asby River</i>	32. 40	78. 50	11 W.
<i>Cape Charles</i>	37. 14	74. 15	13 W.
<i>New York</i>	41. 0	72. 3	16 W.
<i>Cape Sable</i>	42. 45	63. 25	19 W.
<i>Cape Britain</i>	46. 20	58. 15	19 W.
<i>Trinity Bay</i>	48. 27	52. 15	17 W.
<i>Cape Raze</i>	46. 30	57. 25	21 W.
<i>Cape Roy</i>	48. 21	57. 15	23 W.
<i>Coasts of Hudson's Bay.</i>			
<i>Cape Charles</i>	62. 65	75. 20	35 W.
<i>Cape Jones</i>	55. 3	79. 15	24 W.
<i>Mansfield Isle</i>	61. 20	84. 50	43 W.
<i>Albany River</i>	52. 32	84. 7	20 W.
<i>Cape Churchill</i>	59. 0	92. 57	24 W.
<i>Resolution Isle</i>	61. 55	65. 50	36 W.
<i>Cape Farewell</i>	59. 10	46. 35	32 W.

The Names of Places.	Latitude North.	Longitude East.	Magn. Variat. West.
	D.M.	D. M.	D.
<i>Coasts of Holland and Flanders.</i>			
<i>Scaw</i>	57. 26	10. 10 e.	18 w.
<i>Hambrough</i>	53. 41	10. 24 e.	17 w.
<i>Amsterdam</i>	52. 21	4. 51 e.	15 w.
<i>Dunkirk</i>	51. 18	2. 25 e.	15 w.
<i>Diepe in France</i>	49. 56	1. 6 e.	16 w.
<i>Coasts of France and Portugal.</i>		Longit. West.	
<i>Cape de Hague</i>	49. 46	2. 6	16 w.
<i>Brest</i>	48. 25	4. 24	16 w.
<i>Bordeaux</i>	44. 50	0. 24	15 w.
<i>Cape Finister</i>	43. 6	10. 10	16 w.
<i>Cadiz</i>	16. 16	7. 20	15 w.
<i>Coasts of the main Continent within the Straits.</i>			
<i>Gibraltar</i>	36. 10	5. 42	14 w.
<i>Marseilles</i>	43. 20	5. 15	15 w.
<i>Leghorn</i>	43. 18	10. 29 e.	12 w.
<i>Rome</i>	41. 51	12. 28 e.	12 w.

The Names of Places.	Latitude North.	Longitude	Magn. Variat. West.
	D.M.	D.M.	D.
<i>Naples</i>	41. 5	14. 28 e.	11 w.
<i>Venice</i>	45. 18	13. 10 e.	12 w.
<i>Athens</i>	38. 0	24. 19 e.	10 w.
<i>Constantinople</i>	41. 7	30. 0 e.	9 w.
<i>Tripoli</i>	34. 40	35. 40 e.	8 w.
<i>Alexandria</i>	31. 7	30. 50 e.	9 w.

*Coasts of the Sound
in the Baltick.*

	Lat. North.	Long. East.	Var. West.
<i>Lorwick</i>	58. 25	9. 5	18 w.
<i>Gottenburgh</i>	57. 33	12. 35	16 w.
<i>Stockholm</i>	59. 20	18. 25	15 w.
<i>Petersburgh</i>	59. 25	29. 50	12 w.
<i>Revelle</i>	59. 0	24. 45	13 w.
<i>Dantzick</i>	54. 22	19 0	13 w.
<i>Scaw</i>	57. 26	10. 10	16 w.

*Coasts of Nova Zem-
bla, and the Nor-
thern Isles.*

	Lat. North.	Long. East.	Var. West.
<i>Cherry, or Bear Isle</i>	74. 35	18. 5	25 w.
<i>Admiralty Island</i>	75. 5	59. 50	3 w.
<i>Fretum Burrough</i>	69. 55	62. 5	1 w.

The Names of Places.	Latitude North.	Longitude East.	Magn. Variat. West.
	D. M.	D. M.	D.
<i>Archangel</i>	65. 5	35. 30	11 W.
<i>North Cape</i>	71. 25	22. 0	19 W.
<i>North Berghin</i>	60. 16	5. 40	20 W.
<i>Southern Isles.</i>			West.
<i>Madagascar</i>	26. 6	46. 20 E.	24 W.
<i>St. Helena</i>	15. 55	7. 0	W. 12 W.





A
T A B L E
O F

*The Latitudes, Longitudes, and
present Magnetical Variations
at noted Towns and Places.*

The Names of Towns.	Latitude North.	Longitude West.	Magn. Variat. West.
	D. M.	D. M.	D.
A IX in France	43. 31	5. 12	14 W.
Amsterdam	52. 21	4. 40	15. W.
Athens	38. 5	25. 22	9: W.
Augsburgh	48. 24	11. 0	13: W.
Brussels	50. 48	4. 15	15 W.
Cracow	50. 10	20. 7	13 W.
Dublin	53. 11	7. 37	W. 21.
		C 2	

The Names of Towns.	Latitude North	Longitude East.	Magn. Variat. West.
	D. M.	D. M.	D.
<i>Frankfort</i>	50.4	9. 0	14. w.
<i>Hamburgh</i>	53.41	10. 22	16 w.
<i>Liege in Germany</i>	50.40	5. 55	15 w.
<i>Lisbon</i>	38.40	10. 52 w.	14: w.
<i>Lions in France</i>	45.45	4. 57	14 w.
<i>London</i>	51.32	0. 0	17. w
<i>Madrid</i>	40. 10	3. 37 w.	15: w.
<i>Mantua</i>	45. 11	10. 57	13. w.
<i>Milan</i>	45. 20	9. 26	13. w.
<i>Moscow</i>	55.34	38. 45	6 w.
<i>Namur</i>	50.25	5. 5	15. w.
<i>Nuremburgh</i>	49. 29	11. 0	14 w.
<i>Parma</i>	44.44	10. 35	13. w.
<i>Rome</i>	41.51	12. 37	11: w.
<i>Roterdaui</i>	51.55	4. 17	15: w.
<i>Stockholm</i>	59.30	18. 22	15: w.
<i>Syracuse</i>	37.4	15. 12	11. w.
<i>Toledo</i>	39.46	4. 52 w.	15. w.
<i>Toulon</i>	43. 7	5. 42	13: w.
<i>Utrecht</i>	52. 5	4. 57	16. w.
<i>Warsaw</i>	52. 14	21. 22	13. w.



EXPLANATION

Of the following General

T A B L E.



In the above or upper
Line in the Tables are
the *Latitudes*, both
Northern and South-
ern; in the first Column on
the

the left hand are the Longitudes accounted both Eastward and Westward from the Meridian of *London*, and in the common Angles (or Meetings) are the Degrees of the Magnetical Variations (or Deviations) of the North Point of the Magnetick Needle, from the true North to the East or to the West, even to the very South Point of the Horizon.

Note, That two Dots (:) at any Number, shews that Variation to be some Minutes *more*; and one Dot (.) shews that the Variation is some number of Minutes *less*, than that Number stands for.

*A Specimen of the General TABLE
of the Magnetical Variations.*

Long. East from Lond.	Degrees of NORTHERN LATITUDES.									
	65	60	55	50	45	40	35	30		
	Degrees of North-Easterly Variations.									
95	10 e.	8: e.	7. e.	5 e.	4 e.	3: e.	2. e.	0 e.		
100	11 e.	9 e.	7: e.	6. e.	4 e.	3. e.	2. e.	1. e.		
105	15 e.	13. e.	11. e.	9. e.	7 e.	5: e.	4 e.	3. e.		
110	16: e.	14. e.	11 e.	10 e.	8. e.	6 e.	5 e.	3 e.		
115	19. e.	16. e.	13 e.	11 e.	9 e.	8. e.	6: e.	5: e.		
120	20 e.	17 e.	14: e.	12 e.	10 e.	9. e.	8. e.	6 e.		
125	22 e.	18: e.	15: e.	13 e.	11: e.	10 e.	8: e.	7 e.		
130	24 e.	20 e.	17: e.	15 e.	13. e.	11. e.	10. e.	9. e.		
135	25: e.	21: e.	18 e.	15: e.	14. e.	12. e.	10 e.	9 e.		
Long West from Lond.	Degrees of NORTHERN LATITUDES.									
	65	60	55	50	45	40	35	30		
	Degrees of North-Westerly Variations.									
90	30 w.	23 w.	20 w.	16. w.	12: w.	11 w.	9 w.	8. w.		
95	25 w.	18: w.	14 w.	11 w.	9 w.	8. w.	6 w.	5 w.		
100	20 w.	15. w.	12 w.	9: w.	8. w.	6. w.	5. w.	4: w.		
105	16 w.	12. w.	10. w.	8 w.	7. w.	5: w.	4: w.	3: w.		
110	10 w.	8. w.	6 w.	5 w.	4: w.	3: w.	3. w.	2. w.		
115	2. w.	2. w.	1: w.	1: w.	1 w.	1 w.	1. w.	1. w.		
120	5 e.	4 e.	3 e.	3 e.	2: e.	2. e.	2. e.	2. e.		
125	13. e.	8: e.	7. e.	5. e.	4 e.	3 e.	3 e.	3 e.		
130	18 e.	13: e.	9: e.	8. e.	6 e.	5 e.	4 e.	4 e.		

*A Specimen of the General TABLE
of the Magnetical Variations.*

Long East from Lond.	Degrees of SOUTHERN LATITUDES.							
	30	35	40	45	50	55	60	65
	Degrees of North-Westerly Variations.							
95	17 w.	20: w.	24 w.	29: w.	34 w.	46 w.	64 w.	91 w.
100	14. w.	16: w.	19 w.	23: w.	30. w.	40 w.	60 w.	96 w.
105	10. w.	12 w.	13: w.	16: w.	20 w.	28: w.	48. w.	104 w.
110	5 w.	6 w.	7 w.	8. w.	10 w.	15 w.	27 w.	113: w.
115	0 w.	0: e.	1. e.	2. e.	2: e.	3: e.	4 e.	157 e.
120	5 e.	6. e.	8. e.	10. e.	13 e.	18 e.	33. e.	101: e.
125	9 e.	11 e.	13 e.	17 e.	22 e.	31 e.	52 e.	100 e.
130	12: e.	15 e.	18 e.	23. e.	28: e.	40. e.	58: e.	95: e.
135	17. e.	20 e.	24 e.	30. e.	37 e.	49 e.	66. e.	92. e.

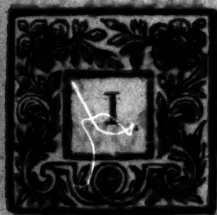
Long West from Lond.	Degrees of SOUTHERN LATITUDES.							
	30	35	40	45	50	55	60	65
	Degrees of North-Easterly Variations.							
90	4 e.	5 e.	6 e.	7 e.	8 e.	9 e.	10: e.	12 e.
95	7 e.	8 e.	9 e.	10 e.	12. e.	12: e.	14 e.	15 e.
100	7. e.	8 e.	9: e.	11. e.	12: e.	14. e.	16. e.	18 e.
105	8 e.	9 e.	10: e.	12 e.	14 e.	15: e.	17 e.	20 e.
110	9 e.	10: e.	12 e.	14 e.	16. e.	18 e.	20: e.	23 e.
115	11 e.	12 e.	14. e.	16. e.	18 e.	20 e.	23 e.	26. e.
120	12 e.	14. e.	16. e.	18. e.	20. e.	22 e.	24 e.	28 e.
125	13: e.	15 e.	17 e.	19 e.	21 e.	24 e.	27: e.	31 e.
130	15 e.	16 e.	19 e.	21: e.	23 e.	27 e.	30 e.	34 e.



CERTAIN
ANIMADVERSIONS

Relating to

The Deviations of the
Magnetick Needle in the
Mariner's Compass.



IN what Time, and by
whom the *Mariner's*
Compass was first In-
vented, is not agreed on; how-
ever,

ever, it is well known to be a most Useful and Necessary Instrument, and for some Time after its first Invention was thought to Point out at all Times and Places the true North and South: but Time and Observations discovered the same to point out in some Places North-Easterly, and at the same Time at other Places North-Westerly; and supposing that the same would continue so without any Change of the Variations at those Places, on which Supposition it was thought requisite by the Naval Powers to give positive Orders that all Ship-Masters should carry with them

them good Instruments, and to make accurate Observations * at all noted Places wherever they should come to, and register the Observations so made in a Table for a general Use ; sparing neither Pains nor Charges in the Pursuit, as thinking thereby to settle a standing Rule or Guide to sail by the Rhombs to any designed Port ; whereupon many learned Men assign'd their several Reasons or Causes of that Difference of the Variations at different Places, and several Thousand Pounds expended in Experiments and Researches concerning the same, and the Causes

* Of the Magnetical Variations.

there-

thereof; but in Process of Time the said Variations were observed to vary from what they were formerly; then several learned Men did set about to search out, if possible, the natural Causes of those Changes of the Magnetick Variations, each having their different Notions concerning the same: Some did attribute the Cause to huge Rocks of Loadstones nigh the Poles of the Earth, which did attract the Magnetick Needle towards them. — Some others to the Influence of the Heavens beyond the moveable Spheres, — some to Astral Influences, and the Deviations of the

the Polar Stars,— some to the Poles of the World or Universe,— Others to the Poles of the Zodiack,— some to the Zenith Poles of the Air,— some others to huge Continents or Promontories. As to the Causes of the Variation of Variations, some would attribute the Cause to Errors in former Observations of the Variations, — others to a local Change of the Fibres of the Earth, occasioned by some subterraneous Quality,— some to terrestrious and aqueous Bodies condensing the Air in the lower Region, and so causing an Obliquity in the Streams thereof,— some to the Streams of the Air both from the Northern and South-

Southern Polar Parts, as being attracted by the mighty Power and Heat of the Sun,--- the Modern Sages ascribe the Cause of the Change of the Variations to four Magnetick Poles, *i. e.* two at the North and two at the South Poles of the World, *i. e.* a Northern and a Southern Magnetick Pole belonging to the outward shell of the Earth, and the other two Magnetick Poles belonging to a Revolving Internal Magnetick Nucleus loosely rolling in the Bowels of the Earth, but not keeping an exact Pace with those of the outward shell of the Earth, they deem to be the Cause

for from the Northern and Southern

of the Changes of Magnetick Variations,— and many more Suppositions; which, and the several learned Persons * Names, would be too tedious and needless here to insert. But neither of them hitherto presuming positively to assert the true Cause; and after all their Researches, Suppositions and nice Disquisitions; concluded, that the Cause of the Changes of the Magnetick Variations was as yet in the Bottom of *Democritus's* Pit, as not being able to extract it thence.

* Gibbert, Ridley, Barlow, Grandamicus, Kircher, Gassendus, Digby, Charlton, Harvey, Simler, Halley, Whiston, &c. being a few of those before hinted at.

That

That a Practical Method for knowing the Magnetical Variations of the *Mariner's* Compass, *i. e.* (the Deflexions or the Deviation of the Magnetical Needle from the true Meridian) at any distant Places, as if there Observing has been judged by most Men equally difficult as to find the Longitude at Sea (yea even impossible) for very many inquisitively learned and ingenious Men, both in this and former Ages, have used much Diligence, Charges and Industry in search after the same, judging it (and that very justly) to be of so great Concernment both in the Arts of Navigation

vigation, Geography, Surveying, Dialling, tracing out the right Course of Mines, and Mineral Veins to or from any remote or distant Place, &c. For neither of them can be well performed without a true Knowledge thereof.

“ And that the Neglect there-
 “ of, doth little less than render
 “ useles one of the noblest Inven-
 “ tions Mankind ever attained to,
 “ for without the Knowledge of
 “ the Laws and Theory of the
 “ Magnetick Variations, the
 “ Art of Navigation cannot be
 “ perfect, and that if the Varia-
 “ tions of the Compass were
 “ better

“ better known, and a General
 “ Table of the same calculated
 “ to a certain Year (if possible)
 “ because of the continual In-
 “ crease and Decrease thereof
 “ in all Places, they deeming
 “ that such a Table would be
 “ of infinite Service to Mankind,
 “ as being of Opinion that many
 “ Ships have been put by their
 “ designed Ports, and lost for
 “ want of knowing the Varia-
 “ tions, and that *England* does
 “ not know how many Losses
 “ have happened for want of
 “ a better Knowledge of the
 “ Magnetical Variation of the
 “ *Mariner's* Compass.”

—Behold,

—Behold, here such a Table as was so much wanted and wish'd for, now prepared, being deduced and calculated from unerring Principles not yet communicated, and is submitted to the Impartial and Candid; but not to the invidious Detractors of the Age, who are ever ready to Dislike and Disparage whatever they are not Masters of themselves (altho' otherwise Learned) and would much rather that the Invention and best Performances of any other (how useful soever) should be for ever buried in Oblivion than miss the (undeservedly) Praise of being themselves the

D

In-

Inventors and Performers thereof: such Men are generally most averse to the Promoting any useful Discovery or Invention, but what they would fain claim as their own. Had not the Author hereof met with many such Ill-natur'd Usages (as having for many Years past dane'd Attendance, waiting the Pleasure of such Persons who might or ought to have Promoted or Recommended the same to be considered by proper Powers) * both this Table and others of his Labours on the same Subject, as also a perpetual Universal Table of

* And who can tell but that by this Neglect many a good Ship, and Men's Lives that has since perished, might have been saved thereby.

the Magnetical Variations for all Times and Places, might have long since been made publick: and probably, such repugnant and perverse Practices, has occasioned that too too often, many Inventions which might have been Improved to be of excellent Use, were either irrecoverably lost, and with the Authors buried in Oblivion, or otherwise transmitted to, and promoted by, another Nation; and is often attended with Loss and Reproach, as not being timely promoted and encouraged to make the same publickly known, and secured from the Hazard of being Pyrated, which is a Practice too no-

torious.—— That the Author's
 Labours not yet made publick
 be not left subject to a like Fate,
 it would be commendable, if
 those proper Powers, or some o-
 ther generous and noble minded
 Persons, would cherish, by their
 seasonably countenancing it, and
 in so doing prevent the Loss there-
 of, seeing that no other Person
 whatever hitherto known has been
 able to devise and perform the
 like; and may be irrecoverably
 lost, if not seasonably embraced,
 (if not already too late in Life)
 and now requires the constant
 Attendance of an Amanuensis
 to

to put the whole in right Order. What farther concerns this Subject, is referred to a small Treatise, intituled, *The Mariner's Compass compleated.*

The present Magnetical Variation for the Time being, at any Place, ought to be known by all who have the Charge of navigating Ships at Sea, particularly Pilots; but more especially at those Times and Places of most imminent Danger, *viz.* when approaching nigh to any Land, Promontory, Gulph, Streight, Inlet, Haven or Harbour's Mouth, &c. when Land-marks cannot be seen by Reason of thick Fogg, Mists

Mists and Darkneſs, and the Soundings uncertain; it being often hazardous to delay Time, and to keep off at Sea until it does clear up, and the Landmarks be ſeen; leſt a ſudden and violent Storm ſhould enſue, and marr the Whole. Therefore at ſuch Times and Places, this Table may be of ſervice to inform the careful Seaman on what Point of the Compaſs he ought then to ſteer, in order to arrive ſafe at his deſired Port.

VARI-

VARIOUS are the Methods proposed in order to improve and perfect the noble Art of Navigation, and for the better settling of Geography and Hydrography; many of them being seemingly true in Theory, yet very chargeable, tedious and difficult in Practice: but the Method for observing the Variations (or Deviations) of the Magnetick Needle in the *Mariner's* Compass, is so commonly known, that it admits of little Difficulty.----- Therefore a true Knowledge of the Laws of the Magnetick Needle is necessary to the Improvement of the Art of Navigation.

ledge

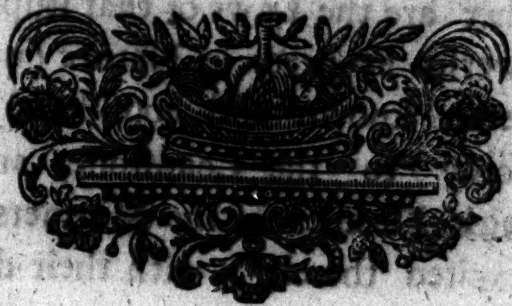
netick Variations is, in all Probability, the most likely and certain Method to perfect the aforesaid Purposes; which will be a more sure Guide in navigating Ships at Sea, and render the Voyage more Expeditious.

And in order to the better obtaining the true Knowledge of the Variations, it is greatly to be wish'd that those Royal and Mercantile Powers would be so Generous, for the Publick Good, (*viz.* the more Safety of Ships and Mens Lives, and the better settling of Geography, and accelerating of Voyages by Sea)

as

as to cause and encourage good Observations to be made of the Magnetical Variations at noted Places, *viz.* Capes, Head-lands, Islands, Sea-ports, specifying the Times and Places of Observation, and to register the same in a Table.

F I N I S.



IF that most powerful and stupendous Property in Nature, which is commonly understood by the general Acceptation of the Word *Magnetism*, were duly and profoundly considered, it is more than probable that it would open a new and very spacious Scene of Philosophy, very widely different from any other that has ever hitherto been transmitted or discovered to the World, neither by any of the Antient Sages, nor the Virtuoso's of the present Age, and would be a Help to discover profounder Mysteries in the rich Cabinet of Nature, than has hitherto been thought of; whereby both speculative and experimental Knowledge will be greatly improved.

Neither are the Laws of that stupendous and powerful Property in Nature (were the same better known and considered) confined only to the Loadstone, and the Magnetick Needles of the Mariners Compass (excited thereby) with their different Direc-

Directions or Pointing alone: But in like manner it most virtually actuates throughout the whole of the Mineral, Vegetable, and Animal Kingdoms, the which may be experimentally demonstrated to the View.



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